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A CASE OF
SUBCHORDAL SPINDLE-CELLED SARCOMA,
AND ITS SUCCESSFUL REMOVAL BY THYREOTOMY.*

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UPON May 30, 1891, I was called in consultation by the late Dr. George Ross to see Mrs. McQ., aged twenty-two years, in reference to marked dyspnœa, evidently due to laryngeal obstruction, from which she was suffering.

The patient stated that she began to be hoarse four months ago, and that this had gradually increased until there was almost complete aphonia. Dyspnœa set in four weeks ago and slowly increased, until within the past two weeks it had been so marked as to prevent the patient lying down, and for the past few days any attempt to lie down would bring on an attack of suffocation. Within this last-mentioned period—two days—inspiratory stridor has set in, accompanied by depression of the supraclavicular, infraclavicular, and suprasternal regions.

The patient is thin and anæmic-looking, is between eight and nine months advanced in pregnancy (primipara); her facial expression is that of anxiety; sits in the upright position all the

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time, mouth widely open, and respiration is carried on with a good deal of distress; her voice is aphonic and inspiration is accompanied by marked stridor.

Family and personal histories are absolutely negative regarding any phthisical, syphilitic, or malignant taint.

Laryngoscopic examination revealed a large subglottic tumor, occupying so much of the space below the cords as to leave only a very small chink, equal to the size of an ordinary knitting needle, between the posterior surface of the tumor and the posterior wall of the larynx, through which respiration is with great difficulty carried on.

The surface of the tumor is of a dusky red color and upon it several small distended vessels are discernible.

The movements of the vocal cords are perfectly free and they meet well over the surface of the tumor in the median line. The right vocal cord is congested at its anterior third.

I advised preliminary tracheotomy as being at the present moment urgent and necessary in order to relieve the dangerous supervening symptoms of possible suffocation. Consequently, on the following day I performed tracheotomy, being kindly assisted by Dr. Roddick.

Chloroform was administered only to incomplete insensibility. There was nothing unusual to note during the steps of the operation, further than that the isthmus as well as the lateral lobes of the thyroid gland were much enlarged, and coming down from the isthmus to join the transverse innominate vein were three very much dilated veins, each about the size of a goose quill. It was found necessary to ligate the middle one, which lay upon the center of the trachea, the others being held to one side. I decided to open the trachea as low down as possible, because it was uncertain how far down the tumor might extend into the trachea. Upon the introduction of the tube (Durham) the breathing at once became tranquil and easy.

Twelve days later, the patient having hitherto progressed satisfactorily, the temperature having never risen above normal, upon consultation with Dr. George Ross and Dr. J. C. Cameron, it was decided that premature labor should be induced, and

with that in view Dr. J. C. Cameron undertook the charge of the case.

Two days subsequently the patient was delivered of a well-developed female child.

The influence of this delivery upon the condition of the tumor was striking. Laryngoscopic examination showed that the laryngeal tumor had decreased in size, leaving, consequently, a larger breathing space, and the hyperæmia of the right vocal cord which was seen earlier in the progress of the case had completely disappeared, leaving it perfectly white, and when the tracheal wound was closed the patient could breathe more freely, though still the breathing was labored.

Three weeks after the confinement the operation for removal of the intralaryngeal tumor by means of thyrotomy was undertaken.

In this procedure I was kindly assisted by Dr. Shepherd. Chloroform was administered through the tracheal cannula by Dr. Evans.

The site of the operation was thoroughly cleansed by means of hot water and soap; the head thrown back over a round pillow. The incision was made in the median line from the upper border of the thyroid cartilage to the lower border of the cricoid cartilage, continuing the dissection until reaching the thyroid cartilage, and during these steps there were several veins cut which bled very freely, and the amount of fat surrounding the structures added to the difficulty of readily exposing the thyroid cartilage; this when thoroughly exposed was incised from above downward, exactly between the two *alæ*, throughout their entirety, and continued through the crico-thyroid membrane to the upper border of the cricoid cartilage.

The *alæ* were held apart, thus completely exposing the tumor, which was drawn up and out of the larynx and twisted off close to its site of attachment.

The larynx was now thoroughly explored by means of transmitted light, and by the aid of a rhinoscopic mirror inside of the larynx it was seen that the tumor had had its origin on the right *alæ* of the thyroid cartilage, just below the vocal cord on that side.

The site of attachment of the tumor was then cauterized with chromic acid. After tying all the bleeding points which had been secured by Péan's forceps, I endeavored to suture the alæ of the thyroid cartilage, but the needle broke on one occasion, and on the second it cut through the cartilage; in order then to bring them together, I passed three deep sutures (silk-worm gut), approximating thus the deeper structures; superficial ones closed the wound. The dressing consisted of powdered iodoform and bichloride gauze.

The tumor after removal weighed twelve grains, and measured eighteen millimetres long, twelve millimetres wide, and seven millimetres in thickness.

The tumor was kindly examined by Dr. Finley, who described it as "a spindle-celled sarcoma with the formation of strands of young fibrous tissue, rich in embryonic blood-vessels." This has kindly been corroborated by Dr. Wyatt Johnson and Dr. Adami.

The patient made an uninterrupted recovery, the temperature never rising above 98.5° ; was up five days after the operation, and left for home four days subsequently.

Twelve days from date of last operation the tracheotomy tube was removed, and the wound soon closed.

However, just at the lower edge of the thyroid cartilage a small granulating opening remained, and in spite of all endeavors to close, it refused to do so, until one day, after searching for some foreign body which probably was preventing its closing, a buried silkworm-gut suture was removed, and upon its removal the opening soon closed, and the granulating mass which was seen in the larynx at a point corresponding to the opening outside soon disappeared, leaving the anterior wall of the trachea quite smooth.

I frequently examined this patient, and saw her only four months ago, previous to her leaving the city permanently, and found the subglottic region perfectly normal in appearance and no evidence of any recurrence of the growth; the vocal cords retained the normal pearly white appearance and the voice was absolutely without any alteration in its natural tone.

This case, so far as I am able to ascertain from the literature at my disposal, stands unique, for I find no record of any case of subchordal spindle-celled sarcoma in which the operation of thyreotomy had been performed, and no evidence of its recurrence two years after its removal.

The operation of thyreotomy has frequently been performed for many morbid affections involving the vocal cords or the structure above and below them, such as papillomata, myxomata, fibromata, carcinomata, cicatricial stenosis, removal of foreign bodies, and lately for tuberculosis.

In the study of the statistics of the operation of thyreotomy, especially those tabulated by Bruns and Karl Becker, we find that of two hundred and fourteen cases in which thyreotomy was done for various conditions only eleven succumbed to effects which could be attributed directly to the operation itself; these were pyæmia (two), diphtheria (three), collapse (one), hæmorrhage producing pulmonary œdema (five), and bronchitis (one). So, as far as the operation itself is concerned, it is one therefore practically devoid of danger, and if there is any danger, hæmorrhage into the trachea at the time of the operation is the one to be feared.

In the case just cited this was avoided and the use of a tampon done away with by carefully securing all the bleeding points before the larynx was opened. As regards the final result, this entirely depends upon the cause which renders the operation necessary, "while its effect upon the voice entirely depends upon the seat of the lesion and on its special character" (Cohen).

"Some very conflicting opinions have been expressed with regard to thyreotomy, some asserting that it is an operation free from danger and threatening life, while oth-

ers maintain the opposite. Probably Professor Virchow's opinion is correct—namely, that thyreotomy, performed in an otherwise healthy larynx, is an operation free from risk and danger" (Beverly, *British Medical Journal*, 1891, ii).

The late Sir Morell Mackenzie did not think ample room was obtained by division of the thyreoid, and preferred to do tracheotomy and then remove *per vias naturales*, holding that the space obtained by thyreotomy was smaller than the glottis (Holmes).

Wagner believes that the danger to life from the operation itself is very slight. Wagner, in a paper on thyreotomy, states that "this operation should only be resorted to for the relief of urgent dyspnœa arising from laryngeal obstruction caused by the presence of benign neoplasms or a foreign body, and in which the operation *per vias naturales* is unadvisable or impracticable. In cases of malignant disease it should only be performed where there is a reasonable possibility of eradicating the disease thereby."

Regarding the operation of thyreotomy for tuberculosis, opinions are divided; according to Becker, relief is always given even when death is merely postponed; whereas A. Bergmann warns against operative interference in tuberculosis of the larynx by laryngo fissure, scraping, and cauterization; he had signally failed in so treating two selected cases (Solis Cohen in Sajous's *Annual*, 1890 and 1891).

According to Wagner, the operation in tuberculosis is unjustifiable, and death, which is inevitable in these cases, is likely to be hastened by it.

The reasons for adopting the measure I did in this case rather than removing the growth *per vias naturales* are these:

1. The appearance of the tumor, as seen by the laryngoscope, and the history of its rapid development led me

to believe that I had to deal with a tumor most probably malignant in its nature, and that its thorough extirpation could not be carried out satisfactorily except by thyrotomy.

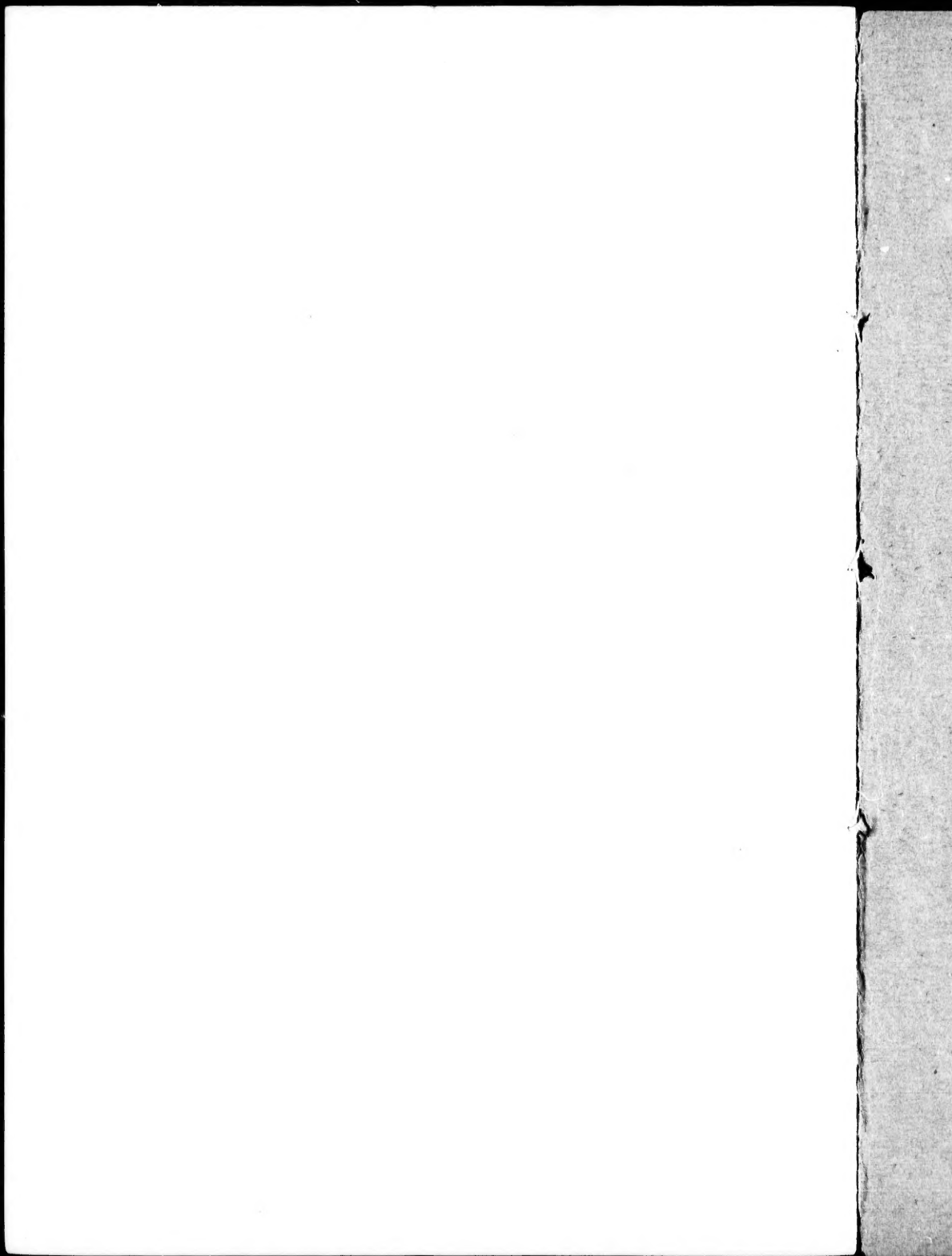
2. It was impossible to tell by laryngoscopic examination whether the tumor was limited entirely to the larynx itself or had an attachment by a broad base to the anterior wall of the trachea.

3. From the hyperæmic appearance which the tumor had, it was more than probable that removal of it piecemeal *per vias naturales* would have been attended with trouble—some hæmorrhage into the trachea.

4. Presuming the growth to be malignant, its removal *per vias naturales* might have led to self-inoculation of other structures within the larynx through slight abrasion of the mucous membrane caused by operative interference.

5. To insure its thorough removal as far as possible *per vias naturales* would have entailed a long time in the training of the patient, which, under the then existing circumstances (pregnancy), might have been more trying and tedious than the operation then performed.

NOTE.—In May last I again saw this patient. There was absolutely no evidence of any recurrence, and the voice was perfectly clear and the patient's health very good.—H. S. B.



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